

# **MEASUREMENT OF RADIO FREQUENCY POWER OUTPUT**

**SECTION 2.1046**

**MEASUREMENT OF RADIO FREQUENCY POWER OUTPUT**

The test arrangements used to measure the radio frequency power output of the Predistortion CDMA Baseband Radio (850) (PCBR) FCC ID: **AS5CMP-43**, is on the following page. Required measurements were made respectively at each frequency where occupied Bandwidth measurements must be performed. The use of the PCBR is for a single CDMA carrier. This requires that the RF power output level be calibrated for the specific channel of use. The test configuration, Figure 1A, allowed the measurement of output power for each channel investigated for Occupied Bandwidth. These included the upper, and lower band edges and at the center channels for 10MHz wide frequency blocks and upper, and lower band edge channels for frequency blocks have bandwidth lower than 10 MHz.. The IS-97 channel allocations are listed below:

**IS 97 channel allocation consists of following channel Blocks:**

Block	FCC Cellular Frequency Bands Per FCC 22.905 MHz	Valid CDMA Channel s & Frequency Range	
		Channel No.	MHz
A'' (1 MHz )	869.000 - 870.000	1013 -1023	869.700 – 870.000
A (10 MHz)	870.000 - 880.000	0001- 0311	870.030 – 879.330
B (10 MHz)	880.000 - 890.000	0356 - 0644	880.680 – 889.320
A' (1.5 MHz)	890.000 - 891.500	0689 - 0694	890.670 – 890.820
B' (2.5 MHz)	891.500 - 894.000	0739 - 0777	892.170 – 893.310

The edge channels are 1013 and 0777.

The PCBR has a maximum RF power output of 0.0126 Watts (11 dBm) +2/-4 dB, it also has a minimum power output at the antenna terminals of 0.00008 Watts (-11 dBm) +2/-4 dB, across the Cellular band (869 – 894 MHz). The signal applied to the PCBR is defined in Table 1.1. The power was reset to 11dBm at each measurement frequency to verify the spectral performance at that power level. The attenuation range was also verified. The specific Frequencies and channels and set power level was documented on each “Occupied Bandwidth” sheet. (see Measurement-3)

Type	Number of Channels	Fraction of Power (Linear)	Fraction of Power (dB)	Comments
Pilot	1	0.2000	-7.0	Walsh 0
Sync	1	0.0471	-13.3	Walsh 32, always 1/8 rate
Paging	1	0.1882	-7.3	Walsh 1, full rate only
Traffic	6	0.09412 each	-10.3 each	Variable Walsh Assignments, full rate only

**TABLE 1.1 BASE STATION TEST MODEL, NOMINAL**

**TEST SETUP FOR MEASUREMENT OF RADIO FREQUENCY POWER OUTPUT**

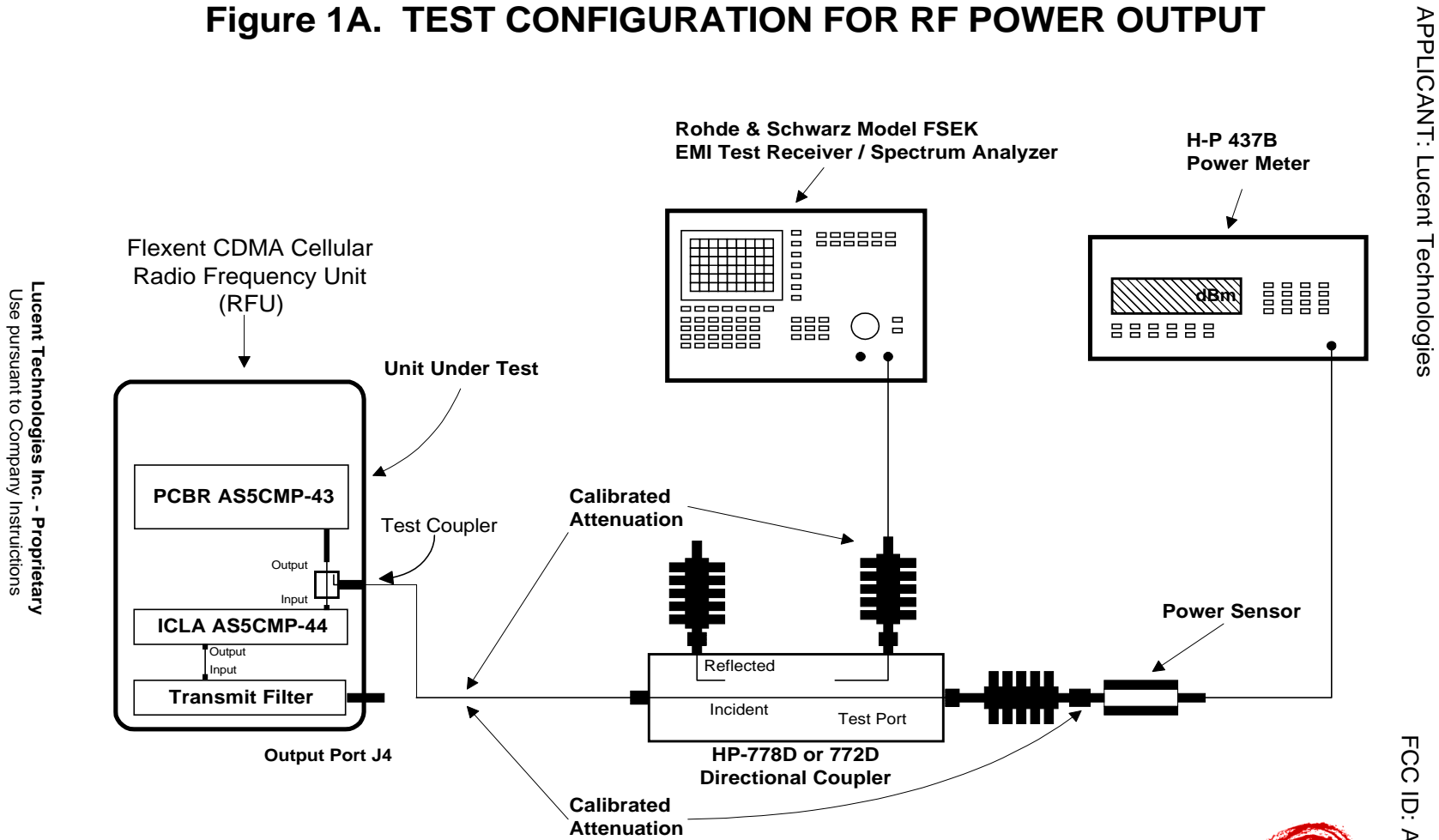
**EQUIPMENT:**

**BBU:** Baseband Unit  
**PCBR:** Predistortion CDMA Baseband Radio (850) (FCCID:AS5CMP-43)  
**ICLA:** Individual Carrier Linear Amplifier (FCCID: AS5CMP-44)  
**Transmit Filter:** Cellular Band Transmit Filter appropriate for the investigated Band  
**Directional Coupler:** HP 778D Dual Directional Coupler  
**Power Meter:** HP 437B with HP 8481A Power Head  
**Plotter:** HP Model 520 DeskJet  
**Spectrum Analyzer:** Rohde & Schwarz FSEK EMI Test Receiver

**RESULTS:**

The PCBR was configured in the test setup shown in Figure 1A. For each of the cellular channels tested the PCBR delivered an 11 dBm when measured at the RF output connection. This data is recorded on the Occupied Bandwidth Data Sheets (see Measurement-3).

Figure 1A. TEST CONFIGURATION FOR RF POWER OUTPUT



All components are calibrated over the frequency range of interest

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